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Lack of space makes it impossible to give many cross-references, or to enter a given reference in more than one place. Each article is therefore entered where it is believed it will be most easily found. In every case the general subject should be sought, rather than the supposed specific title of an article; the article may not be indexed under its specific title at all, but may be entered under a statement of what it is about, so that it may the more readily be found by one seeking references to its subject matter. We call special attention to the classifications "Household Appliances," "Machines and Machine Tools," "Machines for Special Purposes," "Tools," etc., under which many items will be found whose location otherwise would be very puzzling. These groups may be examined item by item for a doubtful entry with much greater ease than can the entire alphabet. The individual articles on the chemistry and motor truck pages are indexed separately; the short notes comprising the columns of text on the advertising pages appear only under their column headings. The asterisk (*) indicates that the article in question is illustrated.

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Armor Mats for the Protection of Bank Vaults

IN these days of coined names to identify certain products, the technical writer must needs proceed cautiously lest he give some convenient word or combination of words to an ordinary product only to discover that he has used a registered trade-mark in vain. A case in point appeared in our October issue, in an article entitled "Protecting Our Great Banks." Therein is a photograph bearing the caption "A 30-inch thick block of steelcrete (concrete and steel) after a laboratory attack lasting only a few minutes, made with modern tools."

Now the truth of the matter is that the caption writer should not have used the word "Steelcrete" in referring to the reinforced concrete block shown in this instance. "STEELCRETE" is a registered trade-mark for a product used for the purpose of reinforcing concrete and for building up "Steelcrete" Armor Mats which are used for the protection of bank vaults. Of course, the name "Steelcrete" was used to signify the usual form of reinforced concrete, without knowledge that such a coined word was a registered trade-mark applying to a definite product. We are very sorry that this error should have occurred.

We are informed by the manufacturers of that product, as well as by affidavit of tests, that it is utterly beyond the scope of any modern implement to cut a man-hole in any properly built concrete wall 30 inches in thickness in a few minutes time, much less a concrete wall containing a "Steelcrete" Armor Mat which type of wall has been pronounced by Government tests to be the strongest and most non-penetrable of all practical forms of vault wall construction.

The great vault in the new building of the Federal Reserve Bank now under construction in New York is protected with "Steelcrete" to the exclusion of the heavy steel laminated metallic plates which have been heretofore used for vault protection. The Bowery Bank vault at 42nd Street, as well as the vault of the Greenwich Savings Bank, Herald Square, are also protected with "Steelcrete."

Our Abrams Investigation—III

(*Continued from page 392*)

Two main reasons have been given for Dr. X's failure, aside from the fact that his equipment or technique may be at fault, according to many of our correspondents. First, our test, having for its object the differentiation of various pure germ cultures, submitted in vials with labels bearing numbers corresponding to those of a list kept in our possession, was quite unfair. This is news to us. We were assured that the test was quite elementary and certainly the starting point in an investigation having to do with such an involved and amazing technique. Our first move was, and still is, to determine whether germs can be detected and properly tagged by means of a battery of rheostats, a simple wiring arrangement, a human "detector" or reagent, and the skilled electronic practitioner. If we could have such a demonstration to our complete satisfaction, then we could go on to the analysis of the more intricate blood sample. The test seemed fair in advance, and was admitted as fair by Dr. X and his staff. The claim that it is unfair is apparently an afterthought, advanced in the light of the total failure recorded. We cannot permit such untimely alibis in a scientific investigation, else we shall never reach an undisputed conclusion. We discuss this "alibi" more strictly on its merits below.

The second reason given for Dr. X's failure was the faulty performance of the reagent, in an electronic reactions sense. We shall come back to this phase presently.

To discuss the first point, it has been pointed out to us that no electronic diagnostician has ever undertaken a test of this exact nature. That may be so, precisely considered; but we do know that Dr. Abrams supplies small vials containing various germ cultures which are employed for testing the electronic equipment. However, our pure germ cultures, we have been told, were entirely too powerful for the sensitive electronic reactions. The radioactive emanations from these samples were so powerful that they "slopped over" or overran all the different "rates", or wavelengths, if we may use that term for convenience, of the diagnostic equipment. Otherwise expressed, the powerful emanations of the pure germ cultures are out of all keeping with the usual weak emanations of a drop of blood, and it is for the latter situation that the apparatus and technique are designed.

Assuming that these comments are based on fact, then we had a most unfortunate situation for the diagnostician. The pure germ cultures gave out such powerful emanations that their respective "rates" were no longer sharply definable, but overrun or "slopped over" the entire scale of "rates." Thus the diagnostician got reactions for almost everything, as was reported in our November issue. We have a suitable analogy in the case of a receiving set located alongside a powerful spark transmitter. The transmitter may be tuned to 500-meter wave length. The operator of the receiver desires to pick up distant stations of other wave lengths. Yet, no matter how he tunes his receiver, he still gets the 500-meter wave length of the nearby transmitter, and not the weak signals from the distant stations. Powerful radio signals are difficult to tune out, at times.

This explanation for Dr. X's failure sounds logical, as far as it goes. We have still to learn more about the electronic reactions and the relative strength of blood samples and germ cultures before we can pass judgment on this explanation. That the electronic workers mean what they say, we have evidence in the request of another doctor to undergo the same test, with certain modifications. This doctor states that he undertook his own test with pure germ cultures after hearing of our test with Dr. X, and that he had unsatisfactory results. Now he desires to have the pure germ culture vials sheathed with lead, so as to reduce the radioactive emanations, and in this way he believes that it will be possible to reduce the powerful "kick" of the cultures so as to confine them to their respective "rates." It may require several tests to obtain satisfactory readings from the rheostats, since we are dealing with an unusual series of circumstances, so we are told; but the averages from several tests ought to give a determinative result.

The second reason for Dr. X's failure is the faulty performance of the reagent, due to the severe strains imposed by the powerful radioactive emanations of the pure germ cultures. We have been told that reagents are a most variable factor in electronic diagnosis—in truth, it is hoped that the time is not far distant when the reagent's delicate nerves, which give the reactions, may be dispensed with in favor of some mechanical or electrical device.

At any rate, George, the reagent employed by Dr. X in our test, may have been rapidly exhausted by the severe strain of the powerful emanations. Thus, after a few moments his reactions were quite unreliable and therefore worthless. To this suggestion we can only reply that George, on several occasions during our long session, was asked to "short" himself, which he did, and the reactions returned to normal in every instance, indicating to Dr. X's satisfaction that the reagent was still performing satisfactorily. Hence this second reason for Dr. X's failure, which has been advanced by several of our correspondents, is readily disposed of.

The entire electronic reactions matter is an intricate case of wheels within wheels. Our plan of investigation for the present is to learn, first of all, the ability of the electronic diagnostician to differentiate various pure germ cultures, which may be suitably diluted or sheathed or otherwise treated to meet electronic requirements. Then we shall go on to blood samples, checking up the diagnoses with clinical reports. We hope to have diagnoses made of handwriting samples, although we fully appreciate that this phase of electronic work is merely an interesting experiment. Having established what the technique is capable of doing, we shall pass on to a study of the equipment involved and the underlying principles. Perhaps we shall examine the electronic treatment, although for the present the diagnostic feature is a sufficient problem and is more readily susceptible to the routine procedures of scientific investigation.